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ABSTRACT

This paper outlines the issues involved in an assessment of the extent and success of the integration of academic and vocational education. It develops questions that could be addressed to state and local education officials to assess the effects of the 1990 amendments to the Carl Perkins Act on both state policies and local practices. Section I describes the pertinent provisions in the Perkins Amendments. The paper outlines eight models of integration at the secondary level and seven conceptions of integration at the postsecondary level and clarifies the different kinds of changes that may occur when academic and vocational education are integrated. Section II reviews existing studies that describe the extent of integration before the passage of the Perkins Amendments, which could be used to determine how much change has taken place in response to the amendments. Section III outlines the methods and the general issues that guide the development of questions. Appendixes include 14 references and 4 sets of potential questions--both closed-ended and open-ended--designed to be administered by conventional survey methods to the state agency responsible for secondary vocational education; to the state agency responsible for community colleges, technical institutes, and other postsecondary institutions; to local educational agencies; and to local postsecondary institutions. (YLB)

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Working Paper

ASSESSING THE INTEGRATION OF ACADEMIC AND VOCATIONAL EDUCATION: METHODS AND QUESTIONS

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ASSESSING THE INTEGRATION OF ACADEMIC AND VOCATIONAL EDUCATION: METHODS AND QUESTIONS

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The 1990 Amendments to the Carl Perkins Act require the National Assessment of Vocational Education (NAVE) to conduct an assessment of vocational programs that "shall include descriptions and evaluations of . . . academic and employment outcomes of vocational education, including analyses of . . . the extent and success of integration of academic and vocational curricula" (Section 403). This paper outlines the issues involved in such an assessment, and then develops a series of questions that could be addressed to state and local education officials to assess the effects of the Perkins Amendments on both state policies and on local practices.

At the outset, it is crucial to recognize the possibilities and limits imposed by the methodology that NAVE will use. The questions presented in this paper are designed to be administered by conventional survey methods — that is, either through phone surveys or through mail surveys to large samples of state officials and local educators. However, the integration of academic and vocational education implies changes in classrooms practices, as Section I below will clarify. While survey methods may be appropriate ways of determining what changes in policies have taken place, especially at the state level, they are awkward ways of

learning how classroom practices have changed (if at all). On the other hand, the strength of survey methods is that they provide a more complete portrait of practices than can be obtained with the case study methods that have been used so far (reviewed in Section II).

In the best of all worlds, the results from survey methods will be combined with site visits and classroom observations to determine more completely what changes have taken place in response to the Perkins Amendments. (See the earlier recommendations to NAVE in Stasz and Grubb, 1991, and the general methodological points of Grubb, 1991.) However, the limitations of survey methods must be kept in mind when judging what can be learned from them.

The first section of this paper describes the provisions in the Perkins Amendments related to the integration of academic and vocational education. Because the legislation is silent on definitions or conceptions of integration, the paper then outlines eight different models of integration and the secondary level, and seven conceptions of integration at the postsecondary level, and clarifies the different kinds of changes that may take place when academic and vocational education are integrated. Section II then reviews existing studies that describe the extent of integration before the passage of the Perkins Amendments, and that could be used to determine how much change has taken place in response to the Amendments. The third section outlines the methods and the general issues that guide the development of questions, with potential questions presented in an appendix.

I. Conceptions of Integration

The Perkins Amendments require that "funds made available . . . shall be used to provide vocational education in programs that . . . integrate academic and vocational education in such programs through coherent sequences of courses so that students achieve both academic and occupational competencies" (Section 235). The Amendments then buttress this provision by requiring that local plans describe how they will provide a vocational program that "integrates academic and occupational

disciplines" (Section 240). In one interpretation, this requirement is consistent with the history of federal vocational education legislation since 1963, which has included program improvement as one of the goals of federal policy. (The other goal has been the inclusion of excluded or under-represented of "special needs" groups.) This time, however, Congress defined program improvement as the integration of academic and vocational education, rather than leaving the definition to state or local discretion.

The requirement pertaining to integration is crucial since all federal funds — at both the secondary and the postsecondary levels — must be spent on some form of integration. Despite its importance, the Amendments themselves provide no idea about what integration is, and the draft regulations also fail to define integration or suggest what it might entail. (Check this.) It is therefore necessary to develop some alternative conceptions of integration before moving to surveys, classrooms observations, or other methods of determining the effects of the Perkins Amendments.

The situation is complicated by the fact that the groups pressing for integration include many different points of view. Policy-makers reforming secondary vocational education, vocational educators trying to find a new relevance for their programs, business people decrying the "narrow vocationalism" of the schools, critics of academic education, and cognitive scientists developing new theories of learning have all lent their support to integration. Because those supporting integration have so many different purposes, the goals of this fledgling "movement" are correspondingly broad. One historically-persistent view has criticized vocational education for its ineffectiveness in enhancing employment, and urged more general forms of vocational education. Another strand of argument, most often associated with the business community, has criticized the deficient academic skills of many youth, especially those in vocational programs, and has insisted that secondary schools first strengthen the basic skills of their students. Vocational educators themselves, responding to declining enrollments caused by the academic emphasis of recent reforms, have suggested broader and less job-specific forms of vocational education better suited to the demands of a technological age; others, recognizing the basic skills deficiencies of

their students, have begun to incorporate more explicitly remedial education in their programs. Critics of high schools, noting the large numbers of students bored by conventional academic methods, have called for new methods to invigorate secondary education, including techniques which vocational education has traditionally espoused. Cognitive scientists have reaffirmed the importance of learning in specific contexts, again suggesting that combining vocational approaches with academic content might generate more powerful results.

Because the support for integration has so many strands, and because schools differ so much in their structure, students, and labor markets, it is not always clear what efforts at integration are trying to accomplish. Furthermore, the practices that have emerged differ substantially at the secondary and the postsecondary levels (though there are some similarities between the two). In either setting, different programs have not been evaluated, so their comparative effectiveness is unknown. In the variety of approaches to integration, there is an important lesson for the NAVE assessment: *many approaches to integrating academic and vocational education exist, rather than a single model that could apply to all educational institutions; and it would therefore be misguided for NAVE or other federal assessment efforts to impose a single definition or decide on one "best" approach.*

Research conducted by the National Center for Research in Vocational Education (NCRVE) on practices at both the secondary and the postsecondary levels provides models or approaches for classifying the integration of academic and vocational education. However, it is necessary to distinguish secondary and postsecondary approaches because of the substantial differences between them.

Integration in Secondary Education

Based on observations in many high school and area vocational school, NCRVE researchers have identified eight models of integrating academic and vocational education, each with several variations (Grubb et al., 1991). The eight models differ widely in how they approach integration and in their ambitions. The models (also summarized in Table 1) include the following:

1. Incorporating more academic content in vocational courses: Some schools have worked to incorporate more academic material into existing vocational courses, either through exhortation, through the adoption of new curriculum materials, or through the development of model curricula. Typically courses continue to be taught by vocational instructors.

2. Combining academic and vocational teachers to incorporate academic content into vocational programs: A somewhat different approach has assigned academic teachers the responsibility of enhancing the academic components of vocational programs. Academic teachers can then teach applied academic courses modified for particular occupational areas, teach individual lessons or modules for vocational students, help vocational instructors to develop their own academic exercises, or pull students out of vocational classes to work on academic competencies. The crucial element in this approach (in contrast to the first model) is that academic and vocational teachers collaborate in modifying vocational programs.

3. Making academic courses more vocationally relevant: A third approach modifies the academic curriculum (instead of vocational courses), by incorporating vocational applications and reconfiguring academic courses so that the topics are more relevant to vocational students. While informal methods of encouraging these changes have been tried, a more common approach has been to introduce specific courses, especially the "applied academics" courses including Principles of Technology, Applied Mathematics, and Applied Communications. These courses have been used in many ways, however. In some cases they are clearly related to vocational purposes in a sequence of courses, while in other schools they have been simply forms of remedial education or electives unconnected to vocational education.

4. Curricular "alignment," modifying both academic and vocational education: Another model combines elements from the preceding approaches, by using more occupationally-relevant material in academic courses and more academic education in vocational courses and then

linking the two. This may happen when two or more teachers, from both the academic and the vocational sides, coordinate the content of what they teach at a particular time — what we term "horizontal alignment." In the best cases, this practice creates sequences of academic and vocational courses that reinforce each other — or "vertical alignment" — clarifying that integrating academic and vocational education can reform entire programs rather than individual courses. Alignment can take place at any scale: it may involve only two teachers (one academic and one vocational) coordinating their courses, or it may involve all teachers in a school (as can be true in models 7 and 8, described below).

5. The senior project as a form of integration: A few schools have instituted senior projects, often requiring a research paper, a physical project, and an oral presentation. Such projects force students to integrate their learning from different courses, including the capacities learned in vocationally-oriented workshops. Several schools with senior projects have found it necessary to revise their curricula in order to better prepare students for independent efforts during their senior year — that is, the senior project forces a kind of vertical alignment..

6. The Academy model: Academies are schools-within-schools that typically include academic teachers in English, math, and science with a vocational instructor in a subject — like health, electronics, business, or agriculture — which gives focus to the Academy. Because these teachers stay with a group of students for all four courses, over two or three years, the possibilities for both horizontal alignment and vertical alignment are increased enormously — though not all Academies succeed in integrating their academic and vocational components. Academies also establish close relationships with particular firms operating in their occupational area, providing students with additional motivation, mentors, and internships.

7. Occupational high schools and magnet schools: In a few cities occupational high schools focused on a cluster of occupations (like health or agriculture) exist, and in other cases cities have established occupationally-oriented magnet schools. These institutions can provide

an obvious focus for efforts to integrate academic and vocational education and a culture in which it is easier to emphasize the occupational content of coursework. They are also excellent examples of "focus schools" (Hill, Foster, and Gendler, 1990) — schools with clear missions and educational purposes, and worthy alternatives to the chaos of the conventional high school. Magnet schools focused on broad occupational areas also have the potential to operate as ""focus schools" and single-occupation high schools, though many of them have not yet realized this potential: their occupational content is too restricted, or they are called magnets without changing their curriculum, or they are so preoccupied with racial integration that they have not yet begun the process of curricular integration.

8. Occupational clusters, career paths, and occupational majors: A few high schools have established departments organized around occupational clusters, in place of academic and vocational departments. In other cases, schools have maintained conventional departments, but students and teachers are organized in "career paths" or elect occupational "majors." This creates a matrix structure, in which teachers participate in both department discussions about particular academic and vocational courses, and in occupational clusters which can then develop coherent sequences of courses and align courses within each cluster. Like the occupational focus of each Academy, occupational clusters facilitate cooperation among teachers and both horizontal and vertical alignment, and provide academic teachers with obvious vocational emphases to incorporate in their classes. In addition, the need to elect an occupational cluster forces students to consider more seriously their occupational futures. Clusters can also combine students from different backgrounds with very different occupational ambitions, reducing the usual segregation of college-bound and vocational students.

From this overview, it is clear that approaches to integration vary considerably, ranging from marginal changes in existing courses to thorough reforms reshaping an entire high school. Their purposes also vary substantially. Some innovations aim to reform vocational programs, often by providing more remediation or academic enrichment for

vocational students; some institute novel occupational programs that are highly disciplinary. In many (but not all) cases, the efforts to integrate have abandoned older conceptions of vocational education as job-specific training, and have shifted to a broader conception in which programs prepare students for clusters of related occupations and for both employment and postsecondary education.

A somewhat different purpose of some reforms is to assist students in the occupational decisions all adolescents must make. Many schools have recognized that enhanced guidance and counseling is necessary to help students understand the purpose of both academic and vocational offerings, and to make informed decisions about their curricula (especially where they must elect an occupational cluster). In addition to increasing resources in conventional career counseling, a few schools have instituted courses exploring technologies and careers, or introduced occupational exploration in academic courses, as ways of providing students with more substantial ways of investigating their occupational futures.

Finally, the most ambitious approaches to integration can be interpreted as efforts to reconstruct the American high school — to grapple with some of its most serious failings and develop a new vision of what secondary education should be. The important components in this reconstruction include:

- Eliminating the "shopping mall high school," by replacing the tendency of students to "mill around" and take unrelated courses with coherent sequences of courses related to broad occupational clusters.
- Enhancing the engagement of students, by replacing the stultifying teaching of conventional academic courses with more activity-based and student-initiated methods, and by clarifying the importance of education to future careers.
- Improving the teaching of all subjects, by replacing the teacher-driven, didactic, and decontextualized methods of most academic classrooms with the student-centered, project-oriented, and contextualized methods used in the best vocational classes.
- Reducing the isolation of teachers — of all teachers, not just academic and vocational teachers — by providing new opportunities and motives for collaboration.

- Reducing tracking and segregation of students, by eliminating (or at least weakening) the divisions between academic and vocational students.
- Providing a clear vision of how business should participate in high schools, to provide the kinds of motivation and incentives that teachers cannot provide and to stress the variety of competencies which students need to master for their occupational futures.

It is also clear that the kinds of changes that take place — the issue of what is integrated with what — vary substantially among the different models of integration. The major kinds of changes include the following:

- Integration of content from traditional academic courses with vocational content: This can be accomplished either by modifying vocational courses (as in Model 1), by modifying academic courses (as in the "applied academic" courses in Models 2 and 3), or by alignment (in the other models). Integrating content does not require collaboration among teachers, though schools in which academic and vocational teachers collaborate usually have more complete integration of content as well.

- Collaboration between academic instructors and vocational instructors: While many approaches to integration do not increase teacher collaboration — like Model 1, in which vocational instructors modify their courses with the help of curriculum material, and (in most cases) Model 3, in which academic teachers teach applied academic courses using curriculum materials "off the shelf" — others operate by having academic and vocational instructors collaborate in some way. The extent of collaboration can vary, of course, from relying on another teacher for a few examples and exercises all the way to joint development of hybrid courses and team teaching.

- A shift away from teaching specific facts and procedures to teaching generic skills, including complex reasoning abilities and widely-useful attitudes and work habits (Stasz et al., 1990).

- Modification of teaching methods, so that teachers can draw upon

the methods common in the best vocational classes and certain practices associated more with academic teaching. The strengths of the best teaching in vocational courses include project-oriented methods, more student-initiated activities (replacing the teacher-dominated classroom), learning and working in groups rather than individually (also referred to as collaborative learning), and the tendency to learn "academic," abstract, or general principles in the context of specific applications. The best vocational instructors tend not to lecture, and their interactions with students are more those of skilled peers and guides than of authoritarian experts. (Of course, there are many vocational instructors who teach in the manner of the worst academic teachers, so that approaches to teaching cannot be simply classified as "academic" or "vocational.") The best methods drawn from academic instruction that may be incorporated into integrated courses include a greater emphasis on writing than is true in most vocational classrooms, a greater use of focused discussion, and the "whole language" principle of exploring several representations of a single idea (as happens when classes explore reading, writing, and oral presentation simultaneously, or when projects incorporate written, oral, and physical components).

- Integration of "academic" students and "vocational" students: Some approaches to integration have developed courses of programs which reduce the tracking within the high school, especially by appealing both to students bound for college and those without college ambitions. In fact, some schools have attempted to soften the distinction between "college-bound" and "work-bound," particularly through the use of clusters which can include students from very different backgrounds and varying ambitions. However, in other cases the effort to integrate academic and vocational education may reinforce conventional tracking practices; for example, several schools have adopted a college-bound "path" with several occupational clusters designed for non-college-bound youth, and Oregon has announced a policy to develop a curriculum for work-bound students separately from the college track.

- Changes in organizational structure to facilitate other forms of integration. For example, this happens when schools organize Academies

or other schools-within-a-school, or when occupational clusters, career paths, or majors are established.

Some of these forms of integration are easier to detect than others, particularly with survey methods. Changes in teaching methods are especially difficult to document, since it may require many days of observation to understand what is taking place. (See, for example, the methodological observations in Stasz et al., 1990.) Changes in tracking practices are also difficult to detect since the opinions of administrators may not be reliable, and since assessing the composition of specific classes and programs by students' socio-economic status, family income, or race and ethnicity is difficult and expensive. Therefore the questions to local administrators presented in the Appendix concentrate on those changes in content and teacher collaboration that are easier to gage without complex research methods.

Integration at the Postsecondary Level

The requirements of the Perkins Amendments pertaining to the integration of academic and vocational education seem to have been written to reform secondary vocational education. However, they apply equally to postsecondary vocational programs in community colleges, technical institutes, and area vocational schools. At the postsecondary level, however, NCRVE research indicates that there has been much less experimentation with different forms of integration, and administrators are much more baffled about what integration might mean. The pressures for integration have been much less powerful; indeed, given that postsecondary vocational education is generally intended to include specialization in occupationally-specific skills and knowledge, the wisdom of integrating academic content — or of taking time from vocationally-specific training for more integrated forms of instruction — is not clear. In addition, many postsecondary vocational programs are integrated by design: that is, most institutions outline programs of study for Associate degree programs (and even shorter certificate programs) that incorporate both a coherent sequence of vocational courses and related academic courses. In that sense the entire program may be

integrated — though individual courses are independent of other courses, and high dropout rates mean that many students may not receive a coherent program.

However, as in the case of secondary schools, the variety of community colleges and technical institutes in this country provides a natural laboratory, allowing us to uncover a variety of practices. Based on preliminary NCRVE research,[1] we can identify seven different approaches to or models of integration at the postsecondary level:

1. General education requirements: The majority of institutions claiming to integrate simply refer to the fact that they have general education requirements for students enrolled in Associate programs. Most of these use a "menu-driven" approach: students choose from a menu of gen ed courses, without any attempt to ensure that the courses chosen are related in any way to the student's occupational area. This approach places all the burden for making connections among courses to students, and therefore strikes us as a pallid form of integration. A few colleges make recommendations to students about which gen ed courses they should take, depending on their occupational area. One college developed a competency-based approach, where work-related competencies (derived

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[1] This research is being conducted by Eileen Kraskouskas and W. Norton Grubb. Methodologically, a postcard was mailed to 295 community colleges and technical institutes, drawn randomly from the membership of the American Association of Community and Junior Colleges (AACJC), asking a dean of instruction whether any integration of academic and vocational education was taking place in their institution. Of 147 responses, 108 or 73 percent claimed to have some form of integration. Of these the largest proportion Q about 40 percent Q integrate through general education; about one quarter reported applied math, one quarter reported using applied writing or technical writing courses, and about a quarter have Writing Across the Curriculum programs. While the survey was designed to generate exemplars, rather than a census of practices, we are reasonably confident that it represents the frequency of different approaches to integration at the postsecondary level. In addition to this survey, a review of the literature, referrals from the staff at the American Association of Community and Junior Colleges (AACJC), and recommendations from individuals operating projects funded by the National Endowment for the Humanities provided other exemplars.

from employers) determine the content of gen ed courses, and one college has specified a set of capacities that all degree programs — including occupational programs — should incorporate.

2. Applied academics courses: The second most common approach has been the development of applied academics courses like technical math, technical writing, business math, business communications, and the like. In all cases, there is an attempt to mold the academic content to occupational areas,. The level of occupational specificity varies: some institutions offer a course like technical math for all students in all occupational areas; at the other extreme, courses for specific occupational areas — like applied math for nurses — are sometimes offered. Most often an academic instructor teaches these applied courses, rather than a vocational instructor. There are relatively few examples of team teaching in postsecondary institutions, though there may be collaboration in the development of curricula. The parallels between applied academics courses at the secondary and the postsecondary levels are strong, except that postsecondary courses are generally locally developed, rather than developed by a national consortium or a state.

3. Expanded vocational courses: Where applied academics courses introduce occupational applications into academic subjects, expanded vocational courses include more "academic" material into vocational courses. There are only a few examples of this practice; the most common are the development of units on ethical issues for courses in industrial engineering, mechanical engineering, and business courses, and one instructor in law enforcement added an historical module.

4. Cross-curriculum efforts: A number of colleges and a few technical institutes have established Writing Across the Curriculum programs, encouraging instructors in all areas to include more writing. In addition, a few colleges have adopted Communications Across the Curriculum, and one developed Math Across the Curriculum. One community college implemented a Reading Across the Curriculum program in which all students read Kurt Vonnegut's *Galapagos* and instructors developed various program-related

exercises oriented around this common reading. Because the subjects of these cross-curriculum efforts are all "academic," they present another way of incorporating more academic content into vocational programs, one supported by the institution through workshops, curriculum materials, and examples. However, participation in such cross-curriculum efforts is usually voluntary, though Florida and some individual institutions have made it mandatory. Several deans of instruction reported that vocational instructors are less likely to participate; the extent to which this approach changes vocational programs is therefore unclear.

5. Tandem courses: We uncovered one example of courses designed to be taken at the same time: an institution which paired an Introduction to Human Services and a specific writing course oriented to the needs and concerns of those in the human services program. (The same institution had developed several other correlated courses, included a drafting course incorporating study skills, and a social science course entitled "Cultural and Racial Issues in the U.S." paired with "Introduction to Fiction" exploring many of the same issues.) These are postsecondary examples of what we have labeled "horizontal alignment" at the secondary level.

6. Cross-disciplinary and hybrid courses: A number of institutions have developed individual courses that combine an "academic" subject — history, literature, or sociology, for example — with occupationally-oriented issues. Examples include courses about the literature of work, one entitled "Working in America" ;and another "Science and Technology as Themes of Literature"; courses with titles like "Society and Technical Change," "History of Technology," and "Technology and Human Values"; and courses like "Ethical Dilemmas in Modern Society" that include ethical issues in the workplace and those caused by technical advances. While they may look like the kinds of courses that would belong in a general education program, there has some effort made in these hybrid courses to make them especially relevant to occupational students. Most hybrid courses have been funded with external resources, often from the National Endowment for Humanities.

7. Vocationally-oriented remedial programs: A final approach has

been to develop remedial (or developmental) programs that use vocational content to teach basic reading, writing, and math. (In contrast, conventional remedial or developmental courses are completely disconnected from both the vocational and the academic courses which presumably follow them; see Grubb et al., 1991.) In one such program, a general introduction to modern technology and technical processes is used to teach basic skills; another provides remediation in a health-related program. These are interesting for several reasons: they are efforts to combat the lack of interest in conventional remediation programs, which have very high dropout rates; and they can be interpreted as efforts to "contextualize" basic skills instruction, an approach which is widely thought to be more effective than conventional teaching.[2]

As we found at the secondary level, there are many approaches to integration at the postsecondary level too. However, examples of integration are much fewer, and the dominant efforts — the use of general education requirements and of applied academics courses — do not appear to be very substantial forms of integration.

II. ESTABLISHING THE EFFECTS OF THE PERKINS AMENDMENTS: PRIOR SURVEYS OF INTEGRATION

An important question for NAVE is to determine the effects of the Perkins Amendments on the integration of academic and vocational education. To do this, it would be helpful to have previous surveys of state policies and local practices that could be used as benchmarks, or assessments of the status of integration prior to the Perkins Amendments. Unfortunately, integration is still such a new idea, and so infrequently practiced, that there are few such benchmarks available.

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2 These efforts can also be interpreted as forms of "functional context literacy training," an approach promoted by Sticht and his colleagues (e.g., Sticht et al., 1987). Most adult remedial education seems to be very ineffective, with very high dropout rates and only marginal improvements; although community college programs appear better than others, there is every reason to experiment with new approaches to remediation (Grubb et al., 1991).

At the state level, Losh, Border, and Bishop (1988) undertook a survey of state liaison representatives to the National Network for Curriculum Coordination in Vocational-Technical Education (NNCCVTE). They asked these individuals to respond to the question: "Is your state working on integrating vocational and academics?" Of the 29 states for which there were responses, only one replied that they had taken no steps. Eighteen states said that they had adopted one or another of the applied academics courses — Principles of Technology, Applied Math, or Applied Communications; this was, therefore, the clearly dominant approach to integration. Three states in the southeast reported that they were members of a consortium of the Southern Regional Education Board (SREB) developed by Gene Bottoms and intended both to increase the expectations within vocational programs and to integrate academic and vocational education (see Bottoms and Presson, 1989). However, since the SREB states typically support only two or three schools in the SREB consortium, and since the changes in SREB schools are sometimes quite small, it is clear that this approach represented a rather trivial commitment to integration. Nine other states mentioned a variety of state initiatives, including pilot projects and state-developed curricula.

A similar survey of state-level policies at the secondary level was undertaken during 1990 and early 1991, as part of a much larger survey of state policies in vocational education and job training in all fifty states (McDonnell and Zellman, forthcoming). State administrators — usually directors of vocational education — were asked the question: "Has the state education agency sponsored any initiative over the past few years to integrate applied and academic content in either general or vocational education courses?" The responses (from 45 states) were similar to those in the survey of Losh, Border, and Bishop: 34 states mentioned participating in the applied academics curricula (Principles of Technology, Applied Math, Applied Communication, and the new Applied Biology/Chemistry); seven were supporting SREB pilot projects; five mentioned task forces, plans, and preliminary workshops; and three volunteered the development of tech-prep and 2+2 programs as a form of integration. Ohio reported its Applied Academics program — a program in which academic teachers in areas vocational schools and a few comprehensive high schools develop their own applied courses (or, less frequently, adapt materials from the applied

academics consortium) for specific classes of vocational students (described more fully in Grubb et al., 1991). New York mentioned efforts to develop integrated courses in business, technical communications, and English, in algebra, geometry, and trigonometry (an applied math course), and in technical sciences and academic sciences. Hawaii has had a Pre-Industrial Program since the mid-1970s, integrating math, science, reading, and writing into vocational courses.[3] Mississippi reported that it has designed its ninth and tenth grade vocational courses to include academic as well as vocational content, in addition to beginning applied academics courses in eleventh and twelfth grades. On a more discouraging note, New Jersey reported a committee with a staff of seven members from both vocational and academic education "responsible for finding the best way to articulate academic and vocational education," but with "no effect on local districts and schools." Overall, five states were only in the planning stage.

The dominant approach prior to the enactment of the Perkins Amendments, therefore, has been the use of commercially-available applied academics curricula; only four states mentioned their own initiatives in developing integrated approaches.[4] The conclusion that few states have had active policies is reinforced by the visits of high schools and area vocational schools in 1989 and 1990, reported in Grubb et al. (1991): most integration efforts have been locally developed, rather than resulting from state policies. Only Ohio (see Applied Academics, 1990) and, to a limited extent, New York (described in Adelman, 1989) appear to have established coherent state policies about integration, other than the support of applied academics curricula. Thus any different responses

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[3] The need for a site visit to observe classes in this state is quite obvious. Under duress, the first author of this paper would be willing to volunteer.

[4] However, it is important to be careful in judging what it means for a state to support the applied academics curricula. Some of them have simply joined the appropriate consortia and bought curriculum materials for their schools to use; others, especially Oregon and Washington, appear to have spent considerable effort at the state level helping teachers modify these curricula to their own ends. While most states seem to support using curriculum materials "off the shelf," then, this is not uniformly true. One question in the third questionnaire to local educators is intended to explore how schools have used the applied academics courses.

uncovered by NAVE's survey of state administrators might be attributed to the Perkins Amendments.

At the postsecondary level, there has been nothing comparable to the two surveys of secondary administrators just summarized. The NCRVE 50-state survey asked state officials about a number of curricular issues including program completion requirements, policy about remedial education, customized training, the state role in program approval, and state guidance about course content and sequencing, but not about integration. Indeed, a difficult issue in general is the extent of state control over postsecondary programs in community colleges and technical institutes: while a few states (e.g, Florida) appear to have strong state-level policies, the emphasis on local control and institutional autonomy are much stronger at this level than at the secondary level. It is therefore difficult to imagine most states playing a very strong role in shaping curricular decisions, especially changes as subtle as integration.

At the local level, there has been no formal survey that could provide a benchmark for NAVE's research. There have been several informal attempts to locate high schools and area vocational schools trying some form of integration. One was carried out for the previous National Assessment by Nancy Adelman (1989), who scoured the country for interesting cases and ended up describing five efforts; while there were clearly other examples similar to the schools she described — for example, she described only one of the many Academies that exist, and only one of the many examples of applied academics programs in Ohio — she did not learn of many other exemplars of integration.[5] (See also Pritz and Crowe, 1987, which describes a few schools.) Several exemplary vocational programs, including some single-occupation high schools, have been described in Mitchell, Russell, and Benson (1989). A search for integration efforts similar to that of Adelman has been undertaken by researchers at NCRVE, using various electronic mail networks as well as word of mouth. While we continue to hear of other schools experimenting with integration, there are very few of them in addition to those reported in Grubb et al. (1991). In an informal way, therefore, I believe that NCRVE researchers collectively know about most of the secondary schools that

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[5] Personal communication, Nancy Adelman, Policy Studies Associates.

had attempted some form of integration prior to the passage of the Perkins Amendments. There are, of course, other ways of establishing the influence of the Perkins Amendments: the questions to local districts included in the Appendix ask directly how schools are using their Perkins funds, and when any integration-related reform was initiated.

Similarly, there is no formal census of postsecondary efforts to integrate academic and vocational education, though the research being undertaken by Grubb and Kraskouskas constitutes an informal survey starting with a sample of about 300 community colleges and technical institutes. Again, the most straightforward way to ascertain the effects of the Perkins Amendments will simply be to ask how postsecondary institutions have interpreted the integration requirement, how they are using their Perkins funds, and when they initiated any integration efforts.

III.. Issues and Research Questions

Evidently, the questions that must be addressed to the state level, about policies that promote or restrict local efforts at integration, are quite different from those addressed to local educators about their use of Perkins funds and their plans for integration. In addition, because the nature of integration is so different at the secondary and the postsecondary levels, separate questions must be used at each level. Therefore the Appendix to this paper includes four sets of questions:

(1) Questions to the state agency responsible for secondary vocational education. This is usually the single state agency which receives Perkins funds as well.

(2) Questions to the state agency responsible for community colleges, technical institutes, and other postsecondary institutions. In some states there may be more than one such agency.

(3) Questions to local educational agencies.

(4) Questions to local postsecondary institutions.

The questions included are a mixture of closed-ended and open-ended questions. Of course, it would be desirable to limit these protocols to closed-ended questions, which would facilitate descriptive statistics and

generalizations across educational institutions. Unfortunately, in our experience the range of practices is so great that closed-ended responses cannot possibly capture all the variation in responses to the Perkins Amendments that is likely to exist. Therefore, the questions we have included typically pose a closed-ended question, and then ask respondents to elaborate as appropriate.

One of the important issues to explore in these questions is the nature of state-local relationships. In earlier research about integration, it has become clear that state perceptions of policies and local perceptions can be quite different. In particular, some state policies end up being quite burdensome on local institutions, and may constrain integration at the same time that other policies are attempting to promote integration; for example, teacher certification standards, requiring "academic" courses to be taught by teachers with academic certification, have sometimes thwarted the efforts of instructors with vocational certification to teach hybrid applied academic courses, and cumbersome course approval mechanisms have also hampered efforts to develop new curricula.[6] Therefore various questions to local institutions are included to determine the nature of state-local relationships.

Surveys of state and local educators often include questions to elicit opinions about the status and trend of education. For example, one might imagine a series of questions about whether administrators think that integration will improve in response to the Perkins Amendments. It is always difficult to interpret the results since administrators may attempt to cast their own activities in a positive light, particularly in the case of policies which are federal goals. In addition, it is never clear what standard administrators use to answer these questions; to know that a certain proportion of administrators report that integration has "substantially increased," for example, is relatively meaningless. For these reasons, the questions included in this report are largely confined to those about policies and practices, rather than opinions.

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[6] In addition to the results in Grubb et al. (1991), NCRVE research in progress at RAND by Sue Bodilly, Cathy Stasz, and Kim Ramsey will provide much more detailed information about barriers to implementing integration. This research has informed the questions about state policy contained in the questionnaires presented here.

The questions contained in the appendix ask about practices, policies, and plans during 1991-92 and 1992-93, on the assumption that NAVE surveys of state and local programs will take place during 1992-93. There is a serious question of timing that must be directly confronted, both in formulating the questions posed to local educators and in interpreting the results. The initial year under the Perkins Amendments is 1991-92. We anticipate that states and localities will spend a great deal of this year in initial planning and start-up activities — particularly since the regulations will not have been published by the start of the 1991-92 school year, adding to the general confusion about new legislation and new requirements. Then implementation of new programs may not occur until the 1992-93 school year. The earliest we might expect to see changes is 1993-94. Indeed, with a dynamic process the process of reform might reasonably take five or six years: year 1 would be involved in planning, year 2 would begin the process of change with the ninth grade, years 3 through 5 would complete the process of reform (assuming no special barriers or attempts to reformulate the change) — so that year 6 (1996-97!) would be the first year when a complete reform might be in place. However, NAVE must make its report to Congress in July 1994. Given this time line, the assessment of integration must consider what kinds of changes are planned within this time frame, rather than simply reporting those that have been implemented by 1992-93. Therefore the questions included in the appendix include some which focus on interim outcomes (e.g. replacing general science courses with applied academics) and future plans, in addition to changes which have already taken place.

In the event that space becomes limited in developing various questionnaires, it will be necessary to establish priorities among the questions we have proposed. Should this be necessary, it is important to first asked questions about state policies and local practices; therefore the most important questions are the following:

State secondary questionnaire: Questions I.2 to 8, I.15.

State postsecondary questionnaire: Questions II.1 to 6.

Local secondary questionnaire: Questions III.1 to III.5, III.9, III.13.

Local postsecondary questionnaire: Questions IV.1 to IV .4.

Finally, the questions included in the Appendix assume that there will be other, general questions asked at both state and local levels that

can be used for background information about both states and local institutions — for example, about general patterns of enrollment, financing, and overall policies.

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APPENDIX
SUGGESTED QUESTIONS

I. Questionnaire to the state agency responsible for secondary vocational education.

NOTE: This agency will in most states be the single state agency that receives Perkins funds. In a few states, a postsecondary or other agency will be the single state agency.

1. Did the state education agency sponsor any initiatives to promote the integration of academic and vocational education *prior to* 1991-92 (the first year under the Perkins Amendments)?

Yes - supporting the Applied Academics curricula from CORD or AIT _____
Yes - supporting state-developed integrated curricula _____
Yes - participation in SREB consortium _____
Yes - supporting vocational Academies (schools within schools) _____
Yes - technical assistance for administrators _____
Yes - workshops for teachers _____
Yes - release time for teachers _____
Yes - pilot projects _____
Yes - support for tech-prep or 2+2 programs _____

Yes - other (please describe) _____

No _____

If yes, in what year did initiatives to promote integration begin? _____

Please describe the state's initiative in greater detail.

2. Has the state education agency sponsored any initiatives using Carl Perkins funds to promote the integration of academic and vocational education in 1991-93 — *since* the passage of the Perkins Amendments?

Yes - Applied Academics curricula from CORD or AIT _____
Yes - state-developed integrated curricula _____
Yes - participation in SREB consortium _____
Yes - supporting vocational Academies (schools within schools) _____
Yes - technical assistance for administrators _____
Yes - workshops for teachers _____
Yes - release time for teachers _____
Yes - pilot projects _____
Yes - support for tech-prep or 2+2 programs _____
Yes - other (please describe) _____

No _____

If yes, please describe the state's initiative in greater detail.

If yes, approximately how much Perkins money was devoted to integration? $____

3. If the state has sponsored any of the Applied Academics curricula, does state policy encourage or discourage any particular use of these curricula?

Yes - encourage use for vocational students only _____
Yes - encourage use as part of a coherent sequence _____
Yes - encourage local adoption _____
Yes - encourage use to replace general-track courses _____
No - no restrictions _____

4. If your state has supported any pilot projects, please include descriptions of the pilot projects, copies of the RFP, and any other documentation.

Does the state plan to provide follow-on support to successful pilot or demonstration projects?

Yes _____
No _____

5. Has the state adopted any definition or conception of integration, either in its state plan or in other state policies related to federal or state funding?

Yes _____
No _____

If yes, please describe.

6. Does the state allow Perkins funds to be spent on academic teachers as well as vocational teachers?

Yes - both academic and vocational teachers _____
No - vocational teachers only _____

7. Has the state taken any steps to define or encourage the requirement in the Perkins Amendments that federal funds be used "in coherent sequences of courses?"

Yes _____
No _____

If yes, please describe what actions the state has taken.

8. Has the state taken any steps to encourage or promote the teaching of "all aspects of the industry" in local schools?

Yes _____
No _____

If yes, please describe what actions the state has taken.

9. Has the state adopted any other policies or initiatives other than those mentioned in question 2 – including those related to education in general (like teacher certification, graduation requirements, or model curricula) – to promote the integration of academic and vocational education?

Yes _____
No _____

If yes, please describe.

10. In your judgment, have any state policies discouraged or slowed the integration of vocational and academic education?

Yes - state graduation requirements _____
Yes - teacher certification requirements _____
Yes - course approval process _____
Yes - state model curriculum standards for vocational courses _____
Yes - state model curriculum standards for academic courses _____
Yes - competency-based requirements in vocational education _____
Yes - competency-based or mastery testing _____
Yes - common core curriculum for all students _____
Yes - tech-prep or 2+2 initiatives _____
Yes - state definition or conception of vocational education (please describe) _____
Yes - lack of state funding for vocational education _____
Yes - lack of state funding for vocational equipment _____

Yes - other (please describe) _____

No _____

11. Is the state currently planning to modify any of the barriers to integration mentioned in question 10? If so, please describe what changes are being discussed or planned. Please indicate yes or no for any barrier mentioned.

	Yes	No
State graduation requirements	_____	_____
Teacher certification requirements	_____	_____
Course approval process	_____	_____
State model curriculum standards for vocational courses	_____	_____
State model curriculum standards for academic courses	_____	_____
Competency-based requirements in vocational education	_____	_____
Competency-based or mastery testing	_____	_____
Common core curriculum for all students	_____	_____
Tech-prep or 2+2 initiatives	_____	_____
State definition or conception of vocational education	_____	_____
Lack of state funding for vocational education	_____	_____
Lack of state funding for vocational equipment	_____	_____
Other (please describe)	_____	_____

12. Local applications for Perkins funds are supposed to describe how they will provide a vocational program that integrates academic and occupational disciplines (in Section 240). In your review of local applications for 1991-92 or 1992-93 funds, did your state disapprove any local applications because of inadequacies in this section of the local plan?

Yes _____
No _____

If yes, how many plans were disapproved or modified? _____

If yes, what were the reasons for disapproval or disapproval

13. In your experience, and based on local applications, what practices to integrate academic and vocational education are most common in your state? (Please rank order the following responses, with "1" for most common, "2" for next most common, etc. Leave a blank for practices which are not taking place in your state.)

Remedial education, learning labs, or tutoring in basic skills for vocational students _____
Efforts to incorporate basic skills into vocational classes _____
Efforts to incorporate employability or generic workforce skills into courses _____
Applied Academics curricula - state-developed or consortia-developed _____
Applied Academics curricula - state- or consortia-developed but modified locally _____
Applied Academics curricula - locally developed _____
Collaboration between academic and vocational teachers to coordinate course content _____
Collaboration between academic and vocational teachers to develop new curricula _____
Team teaching with academic and vocational teachers _____
Development of Academies or occupationally-oriented schools within schools _____
Development of occupationally-oriented magnet schools or high schools _____
Development of occupational clusters, career paths, career tracks, or occupational "majors" _____
Development of guidance and counseling activities _____
Other (please describe) _____

14. In your experience, and based on state plans, how are districts using Perkins funds? (Again, please rank order the following responses, with "1" for most common, "2" for next most common, etc. Leave a blank for practices which are not taking place in your state.)

Staff development for teachers _____
Release time for teachers _____
Small class sizes _____
Purchase of curriculum materials, including lab materials _____
Modify existing curriculum materials _____
Original curriculum development _____
Outside consultants for curriculum development _____
Purchase of occupationally-relevant equipment _____
Development of new and more sophisticated vocational programs (please describe) _____

Purchase of computers, software, or curricula for learning labs or other remedial programs _____

Additional career counselors or guidance activities _____

Support of local curriculum coordinators or developers, responsible for integration _____

Other (please describe) _____

15. In your judgment, what has been the general reaction of the following groups to the integration of academic and vocational education?

	strongly supportive	somewhat supportive	neutral	somewhat opposed	strongly opposed	generally uninformed
vocational instructors						
academic instructors						
vocational administrators						
academic administrators						
principals						
state vocational staff						
state academic staff						
vocational students						
other students						
parents						
business community						

16. In the future, is the state currently planning to sponsor any further initiatives to promote the integration of academic and vocational education?

Yes - Applied Academics curricula from CORD or AIT _____
Yes - state-developed integrated curricula _____
Yes - local-developed integration curricula _____
Yes - participation in SREB consortium _____
Yes - workshops for teachers _____
Yes - release time for teachers _____
Yes - pilot projects _____

Yes - other (please describe) _____

No _____

If
yes, please describe the state's future initiative in greater detail.

II. Questions to the state postsecondary agency.

1. Has your agency sponsored any initiatives using Carl Perkins funds to promote the integration of academic and vocational education in 1991-93 - since the passage of the Perkins Amendments?

Yes - support for Applied Academics curricula from CORD or AIT ____
Yes - support for state-developed integrated curricula ____
Yes - participation in SREB consortium ____
Yes - technical assistance for administrators ____
Yes - workshops for teachers ____
Yes - release time for teachers ____
Yes - pilot projects ____
Yes -- support for tech-prep or 2+2 programs ____
Yes - other (please describe) ____
No ____

If yes, please describe the state's initiative in greater detail.

If yes, approximately how much money was devoted to integration? ____

2. If your state has supported any pilot projects, please include descriptions of the pilot projects, copies of the RFP, and any other documentation.

Does the state plan to provide follow-on support to successful pilot or demonstration projects?

Yes _____
No _____

3. Has the state adopted any definition or conception of integration, either in its state plan or in other state policies related to federal or state funding?

Yes _____
No _____

If yes, please describe the state's definition.

4. Has the state taken any steps to define or encourage the requirement in the Perkins Amendments that federal funds be used "in coherent sequences or sources?"

Yes _____
No _____

If yes, please describe what actions the state has taken .

5. Has the state taken any steps to encourage or promote the teaching of "all aspects of the industry" in postsecondary institutions?

Yes _____
No _____

If yes, please describe what actions the state has taken .

6. Has the state adopted any other policies or initiatives other than those mentioned in question 1 – including those related to education in general (like teacher certification, general education requirements, or model curricula) – to promote the integration of academic and vocational education?

Yes _____
No _____

If yes, please describe.

7. In your judgment, have any state policies discouraged or slowed the integration of vocational and academic education?

Yes - state graduation requirements _____
Yes - teacher certification requirements _____
Yes - course approval process _____
Yes - state model curriculum standards for vocational courses _____
Yes - state model curriculum standards for academic courses _____
Yes - competency-based requirements in vocational education _____
Yes - competency-based or mastery testing _____
Yes - common core curriculum for all students _____
Yes - tech-prep or 2+2 initiatives _____
Yes - state definition or conception of vocational education (please describe) _____
Yes - lack of state funding for vocational education _____
Yes - lack of state funding for vocational equipment _____

Yes - other (please describe) _____

No _____

8. Is the state currently planning to modify any of the barriers to integration mentioned in question 7? If so, please describe what changes are being discussed or planned. Please indicate yes or no for any barrier mentioned.

	Yes	No
State graduation requirements	_____	_____
Teacher certification requirements	_____	_____
Course approval process	_____	_____
State model curriculum standards for vocational courses	_____	_____
State model curriculum standards for academic courses	_____	_____
Competency-based requirements in vocational education	_____	_____
Competency-based or mastery testing	_____	_____
Common core curriculum for all students	_____	_____
Tech-prep or 2+2 initiatives	_____	_____
State definition or conception of vocational education	_____	_____
Lack of state funding for vocational education	_____	_____
Lack of state funding for vocational equipment	_____	_____
Other (please describe)	_____	_____

9. Local applications for Perkins funds are supposed to describe how they will provide a vocational program that integrates academic and occupational disciplines (in Section 240). In your review of local applications for 1991-92 or 1992-93 funds, did your state disapprove any local applications because of inadequacies in this section of the local plan?

Yes _____
No _____

If yes, how many plans were disapproved or modified? _____

If yes, what were the reasons for disapproval ?

10. In your experience, and based on local applications, what practices to integrate academic and vocational education are most common in your state? (Please rank order the following responses, with "1" for most common, "2" for next most common, etc. Leave a blank for practices which are not taking place in your state.)

Supporting general education for vocational students _____
Developing applied academics courses (like Technical Math, Business English, etc.) _____
Incorporating more academic content into vocational courses _____
Developing problem-solving or "thinking skills" curricula _____
Cross-curriculum efforts (like Writing Across the Curriculum) _____
Development of "tandem courses," where students take a coordinated academic and vocational course _____
Development of interdisciplinary courses combining occupational issues and academic disciplines (like History of Technology, Ethics in Business, Society and Technology or The Literature of Work) _____
Supporting remedial/developmental education, learning labs, tutoring, and other initiatives to increase the basic skills of vocational students _____
Developing 2+2 or tech-prep programs with local high schools _____

Other (please describe) _____

11. In your experience, and based on state plans, how are postsecondary institutions using Perkins funds? (Again, please rank order the following responses, with "1" for most common, "2" for next most common, etc. Leave a blank for practices which are not taking place in your state.)

Staff development for teachers	_____
Release time for teachers	_____
Small class sizes	_____
Purchase of curriculum materials, including lab materials	_____
Modification of existing curriculum materials	_____
Development of original curriculum	_____
Outside consultants for curriculum development	_____
Purchase of occupationally-relevant equipment	_____
Development of new and more sophisticated vocational programs (please describe)	_____
Purchase of computers, software, or curricula for learning labs or other remedial programs	_____
Additional career counselors or guidance activities	_____
Support of local curriculum coordinators or developers, responsible for integration	_____
Other (please describe)	_____

12. In your judgment, what has been the general reaction of the following groups to the integration of academic and vocational education?

	strongly supportive	somewhat supportive	neutral	somewhat opposed	strongly opposed
vocational instructors					
academic instructors					
vocational administrators					
academic administrators					
principals					
state vocational staff					
state academic staff					
vocational students					
transfer students					
developmental students					
parents					
business community					

13. For the future, is the state currently planning to sponsor any further initiatives to promote the integration of academic and vocational education?

Yes - support for Applied Academics curricula from CORD or AIT _____
Yes - support for state-developed integrated curricula _____
Yes - participation in SREB consortium _____
Yes - technical assistance for administrators _____
Yes - workshops for teachers _____
Yes - release time for teachers _____
Yes - pilot projects _____
Yes -- support for tech-prep or 2+2 programs _____
Yes - other (please describe) _____

If yes, please describe the state's initiative in greater detail.

III. Questions to local secondary administrators.

1. What steps to integrate academic and vocational education have you taken in your school during 1991-93 to integrate vocational and academic education?

Remedial education, learning labs, or tutoring in basic skills for vocational students _____
Efforts to incorporate basic skills into vocational classes _____
Efforts to incorporate employability or generic workforce skills into vocational courses _____
Applied Academics curricula - state-developed or consortia-developed _____
Applied Academics curricula - state- or consortia-developed but modified locally _____
Applied Academics curricula - locally developed _____
Collaboration between academic and vocational teachers to coordinate course content _____
Collaboration between academic and vocational teachers to develop new curricula _____
Team teaching with academic and vocational teachers _____
Development of Academies or occupationally-oriented schools within schools _____
Development of occupationally-oriented magnet schools or high schools _____
Development of occupational clusters, career paths, career tracks, or occupational "majors" _____
Development of guidance and counseling activities _____
Development of tech-prep or 2+2 programs with local postsecondary institutions _____

Other (please describe) _____

When did you begin these changes?

In 1991, with new Perkins requirements _____
Prior to 1991 Year____ _____

2. How are you using your Perkins funds?

Staff development for teachers	_____
Release time for teachers	_____
Small class sizes	_____
Purchase of curriculum materials, including lab materials	_____
Purchase of occupationally-relevant equipment	_____
Modify existing curriculum materials	_____
Original curriculum development	_____
Outside consultants for curriculum development	_____
Purchase of occupationally-relevant equipment	_____
Development of new and more sophisticated vocational programs (please describe)	_____
Purchase of computers, software, or curricula for learning labs or other remedial programs	_____
Additional career counselors or guidance activities	_____
Support of local curriculum coordinators or developers, responsible for integration	_____
Other (please describe)	_____

Please include a copy of your local application for Perkins funds for 1992-93, including the description of how your vocational program integrates academic and occupational disciplines.

3. If you are spending Perkins funds for staff development, in-service, or release time for teachers, which teachers are receiving these benefits?

Vocational teachers only	_____
Academic teachers only	_____
Academic and Vocational teachers	_____
Not applicable to my school	_____

4. If you have adopted any of the Applied Academics courses, how are they being used? (Check all that apply.)

Required for vocational students	_____
Encouraged of vocational students	_____
Part of a sequence of academic and vocational courses	_____
Electives open to all students	_____
Courses used in place of general-track courses (general math, general science, etc.)	_____
Remedial courses	_____
Not applicable in my school	_____

5. If you are using any of the Applied Academics courses, are they: (Check all that apply.)

Used by teachers as is, without modification? _____
Modified to fit local programs? _____
Taught by academically-certified teachers? _____
Taught by vocational instructors? _____
Team-taught by academic and vocational instructors? _____
Used as replacements for general-track courses? _____
Not applicable in my school _____

6. In your efforts to integrate academic and vocational education, how are teachers selected for participation?

All vocational instructors must participate _____
Vocational instructors in particular occupational areas must participate (please indicate which areas) _____
Participation by vocational instructors is voluntary _____
All academic teachers must participate _____
All academic teachers in certain subjects must participate (please indicate which subjects) _____
Participation by academic instructors is voluntary _____

7. Have academic and vocational instructors in your school worked together to develop your efforts and plans to integrate?

Yes _____
No _____

If yes, in what way?

8. Are there any courses developed in your school by academic and vocational instructors together?

Yes _____
No _____

If yes, please describe these courses.

Is there any team teaching of integrated courses in your school?

Yes _____
No _____

If yes, please describe the courses that are team taught.

9. Have you targeted any particular group of students in your efforts to integrate vocational and academic education?

Yes _____
No _____

If yes, what groups of students have you targeted?

Vocational students _____
General-track students _____
All academically deficient students _____
Potential dropouts _____
Handicapped students _____
Limited English-speaking students _____
All students _____
Other (please describe) _____

10. In your efforts at integration so far, what has been the general reaction of the following groups to the integration of academic and vocational education?

	strongly supportive	somewhat supportive	neutral	somewhat opposed	strongly opposed
vocational instructors					
academic instructors					
vocational administrators					
academic administrators					
principals					
state vocational staff					
state academic staff					
vocational students					
other students					
parents					
business community					

11. What are your major objectives for this integration effort?

Improve academic content of vocational classes _____
Improve academic classes in a vocational program _____
Permit vocational students to receive academic credit for vocational coursework _____
Improve students' thinking and problem solving skills _____
Better prepare students for employment _____
Better prepare students for district- or state-level competency tests _____
Increase graduation requirements _____
Meet federal funding requirements _____
Improve career education and choices _____
Improve technical content of vocational classes _____
Increase graduation rates _____
Increase attendance in related postsecondary programs _____

12. What indicators or measures would you use to judge the success or failure of this project?

Increased graduation rate _____
Higher test scores on district tests _____
Higher test scores on state-level tests _____
Lower absenteeism _____
Higher student engagement in classes _____
Improvement in students' thinking and problem solving skills _____
Teacher satisfaction that curriculum changes were improving instruction _____
Parent satisfaction that changes were improving instruction _____
Fewer "general math" or "general science" classes _____
Feedback from employers that students had better skills _____
A more coherent sequence of vocational courses _____
Increased attendance in postsecondary education _____

Other (please specify) _____

13. What plans do you have for any further initiatives to promote the integration of academic and vocational education?

No further plans - we're satisfied with changes already made _____
Will continue to implement the changes described in question 1 (please explain below) _____
Now developing new initiatives _____

If you are planning new initiatives, what are they?

Remedial education, learning labs, or tutoring in basic skills for vocational students _____
Efforts to incorporate basic skills into vocational classes _____
Efforts to incorporate employability or generic workforce skills into vocational courses _____
Applied Academics curricula - state-developed or consortia-developed _____
Applied Academics curricula - state- or consortia-developed but modified locally _____
Applied Academics curricula - locally developed _____
Collaboration between academic and vocational teachers to coordinate course content _____
Collaboration between academic and vocational teachers to develop new curricula _____
Team teaching with academic and vocational teachers _____
Development of Academies or occupationally-oriented schools within schools _____
Development of occupationally-oriented magnet schools or high schools _____
Development of occupational clusters, career paths, career tracks, or occupational "majors" _____
Development of guidance and counseling activities _____
Other (please describe) _____

14. In your efforts to integrate academic and vocational education so far, have district-level policies or practices encouraged or discouraged your efforts?

Strongly encouraged (with money or other incentives) _____
Moderately encouraged or supported _____
Neutral _____
Moderately discouraged _____
Strongly discouraged _____

Please describe how district policies have affected your efforts.

15. In your efforts to integrate academic and vocational education so far, have state-level policies or practices encouraged or discouraged your efforts?

Strongly encouraged (with money or other incentives)	_____
Moderately encouraged or supported	_____
Neutral	_____
Moderately discouraged	_____
Strongly discouraged	_____

16. Of the following state policies or practices, which have been helpful to your integration efforts, and which have tended to discourage those efforts?

	Encourage	Discourage	N/A
State sponsorship of Applied Academics curricula	___	___	___
State development of other integrated curricula	___	___	___
Workshops/technical assistance about integration	___	___	___
In-service activities for teachers	___	___	___
Pilot projects	___	___	___
Other funding	___	___	___
New equipment for integration effort	___	___	___
Competency-based testing requirements	___	___	___
"Core" curriculum requirements for all students	___	___	___
Competency-based course content or objectives	___	___	___
Site-based management or decentralization of administration	___	___	___
State graduation requirements	___	___	___
Teacher certification requirements	___	___	___
Course approval process	___	___	___
State model curriculum standards for vocational courses	___	___	___
State definition or conception of vocational education (please describe)	___	___	___
Other (please describe)	___	___	___

17. Has the state taken any steps to define or encourage the requirement in the Perkins Amendments that federal funds be used "in coherent sequences or sources?"

Yes _____
No _____

If yes, please describe what actions the state has taken .

18. Has the state taken any steps to encourage or promote the teaching of "all aspects of the industry" in local schools?

Yes _____
No _____

If yes, please describe what actions the state has taken .

19. Has the state adopted any other policies or initiatives other than those mentioned in question 2 -- including those related to education in general (like teacher certification, graduation requirements, or model curricula) -- to promote the integration of academic and vocational education?

Yes _____
No _____

If yes, please describe.

IV. Questions to local administrators of postsecondary programs.

1. What steps to integrate vocational and academic education has your institution taken during 1991-93 — after the enactment of the Perkins Amendments?

Supporting general education for vocational students ____
Developing applied academics courses (like Technical Math, Business English, etc.) ____
Incorporating more academic content into vocational courses ____
Developing problem-solving or "thinking skills"curricula ____
Cross-curriculum efforts (like Writing Across the Curriculum) ____
Development of "tandem courses," where students take a coordinated academic and vocational course ____
Development of interdisciplinary courses combining occupational issues and academic disciplines (like History of Technology, Ethics in Business, Society and Technology or The Literature of Work) ____
Supporting remedial/developmental education, learning labs, tutoring, and other initiatives to increase the basic skills of vocational students ____
Developing tech prep or 2+2 programs with local high schools ____

Other (please describe) ____

Please describe your efforts to integrate academic and vocational education in greater detail.

When did you begin these changes?

In 1991, with new Perkins requirements ____
Prior to 1991 Year ____ ____

2. How are you using your Perkins funds?

Staff development for teachers ____
Release time for teachers ____
To reduce class sizes ____
Purchase of curriculum materials, including lab materials ____
Modify existing curriculum materials ____
Original curriculum development ____
Outside consultants for curriculum development ____
Purchase of occupationally-relevant equipment ____
Development of new and more sophisticated vocational programs (please describe) ____
Purchase of computers, software, or curricula for learning labs or other remedial programs ____
Additional career counselors or guidance activities ____
Support of local curriculum coordinators or developers, responsible for integration ____
Other (please describe) ____

3. If you are spending Perkins funds for staff development, in-service, or release time for teachers, which teachers are receiving these benefits?

Vocational teachers only ____
Academic teachers only ____
Academic and Vocational teachers ____
Not applicable to my school ____

4. In your efforts to integrate academic and vocational education, how are teachers selected for participation?

All vocational instructors must participate ____
Vocational instructors in particular occupational areas must participate (please indicate which areas) ____
Participation by vocational instructors is voluntary ____
All academic teachers must participate ____
All academic teachers in certain subjects must participate (please indicate which subjects) ____
Participation by academic instructors is voluntary ____

5. Have academic and vocational instructors in your institution worked together to develop your efforts and plans to integrate?

Yes _____
No _____

If yes, in what way?

6. Are there any courses developed in your institution by academic and vocational instructors together?

Yes _____
No _____

If yes, please describe these courses.

Is there any team teaching of integrated courses in your school?

Yes _____
No _____

If yes, please describe the courses that are team taught.

7. Have you targeted any particular group of students for your efforts to integrate vocational and academic education?

Yes _____
No _____

If yes, which students?

Students in vocational associate programs _____
Students in vocational certificate programs _____
Students in all vocational courses _____
All students, whether transfer or vocational _____
Vocational students with deficiencies in basic skills _____
All students with deficiencies in basic skills _____

Other (please describe) _____

9. In your efforts at integration so far, what has been the general reaction of the following groups to the integration of academic and vocational education?

	strongly supportive	somewhat supportive	neutral	somewhat opposed	strongly opposed
vocational instructors					
academic instructors					
vocational administrators					
academic administrators					
state vocational staff					
state academic staff					
vocational students					
other students					
business community					

10. What are your major objectives for this integration effort?

Increase program completion rates	_____
Meet federal funding requirements	_____
Increase demand for courses	_____
Enhance general education for vocational students	_____
Improve academic content of vocational programs	_____
Improve technical content of vocational programs	_____
Better prepare students for employment	_____
Develop interdisciplinary courses	_____
Enhance students' basic skills	_____
(Other (please describe)	_____

10. What indicators or measures would you use to judge the success or failure of this project?

Greater student demand for integrated programs _____
Increased program completion rates _____
Feedback from employers that students have better skills _____
Improved placement in related occupations _____
Less need for remedial/developmental classes _____
Increased student satisfaction _____
Teacher satisfaction that changes improve instruction _____

Other (please specify) _____

11. What plans do you have for any further initiatives to promote the integration of academic and vocational education?

No further plans - we're satisfied with changes already made _____
Will continue to implement the changes described in question 1 (please explain below) _____
Now developing new initiatives _____

If you are planning new initiatives, what are they?

Supporting general education for vocational students _____
Developing applied academics courses (like Technical Math, Business English, etc.) _____
Incorporating more academic content into vocational courses _____
Developing problem-solving or "thinking skills"curricula _____
Cross-curriculum efforts (like Writing Across the Curriculum) _____
Development of "tandem courses," where students take a coordinated academic and vocational course _____
Development of interdisciplinary courses combining occupational issues and academic disciplines (like History of Technology, Ethics in Business, Society and Technology or The Literature of Work) _____
Supporting remedial/developmental education, learning labs, tutoring, and other initiatives to increase the basic skills of vocational students _____
Developing tech prep or 2+2 programs with local high schools _____

Other (please describe) _____

12. If your institution is part of a multi-campus district, have your efforts to integrate academic and vocational education been encouraged or discouraged by district-level policies or practices?

Strongly encouraged _____
Moderately encouraged _____
Neutral _____
Moderately discouraged _____
Strongly discouraged _____

Not part of a multi-campus district _____

Please describe what district policies have affected your efforts.

13. In your efforts to integrate academic and vocational education so far, have state-level policies or practices encouraged or discouraged your efforts?

Strongly encouraged (with money or other incentives) _____
Moderately encouraged _____
Neutral _____
Moderately discouraged _____
Strongly discouraged _____

Not applicable — have not yet integrated academic and vocational education _____

14. Which of the following state policies or practices have been helpful to your integration efforts, and which have tended to discourage these efforts?

	Encourage	Discourage	N/A
State sponsorship of Applied Academics curricula	—	—	---
State development of other integrated curricula	—	—	---
Workshops/technical assistance about integration	—	—	---
In-service activities for teachers	—	—	---
Pilot projects	—	—	---
Other funding	—	—	---
New equipment for integration effort	—	—	---
Competency-based testing requirements	—	—	---
"Core" curriculum requirements for all students	—	—	---
Competency-based course content or objectives	—	—	---
Site-based management or decentralization of administration	—	—	---
State graduation requirements	—	—	---
Teacher certification requirements	—	—	---
Course approval process	—	—	---
State model curriculum standards for vocational courses	—	—	---
State definition or conception of vocational education (please describe)	—	—	---
Other (please describe)	—	—	---

Not applicable — have not yet integrated academic and vocational education ---

15. Has the state taken any steps to define or encourage the requirement in the Perkins Amendments that federal funds be used "in coherent sequences or sources?"

Yes ____
No ____

If yes, please describe what actions the state has taken .

16. Has the state taken any steps to encourage or promote the teaching of "all aspects of the industry" in local schools?

Yes _____
No _____

If yes, please describe what actions the state has taken .

17. Has the state adopted any other policies or initiatives, other than those mentioned in question 2 - including those related to education in general (like teacher certification, graduation requirements, or model curricula) - to promote the integration of academic and vocational education?

Yes _____
No _____

If yes, please describe.